In the drawings:

Attached to this Amendment are Replacement and Annotated drawings for Figures 1-5.

REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-14 remain pending in this application. Claims 1, 13 and 14 have been amended.

The abstract was objected to as noted in the Office Action. In response, a new Abstract has been submitted on page 3 of this Amendment. Accordingly, this objection should be withdrawn.

Figures 1-5 were objected to as not being designated to by a legend such as "Prior Art". In response, attached to this Amendment are Annotated and Replacement drawings for Figures - 1-5 designated as "Prior Art". Accordingly, this objection should be withdrawn.

Claims 12, 14 are objected to because of the noted informalities. In response, claims 12 and 14 have been amended. Accordingly, this objection should be withdrawn.

Claims 1, 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. In response, claims 1 and 8 and have been amended and this rejection should be withdrawn.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicants' admitted prior art in Figs. 1-5. Applicants respectfully traverse this rejection.

As mentioned in the specification, the present invention relates more particularly to a method based on an uncoupled approach to calibration and equalization.

The device according to the invention has the advantage especially of being without switches and of providing a setting strategy that makes it possible to envisage the calibration of the reception channels included in the presence of strong interference received by the sensors of the network.

The invention proposes a novel approach, especially in the choice of materials and in the choice of calibration/equalization procedures and also proposes a step of verification after calibration/equalization. Finally, an implementation of an onboard system of this kind on a geostationary satellite from the ground is also developed.

The method according to the invention comprises a step for adjusting the gains of the RF chains upstream from the couplers under conditions chosen with knowledge that may or may not be a priori knowledge of the environment of the sensor.

Applicants submit that the prior art cited in the specification fails to describe the claimed feature of claim 1, more particularly the following combination:

-a processor adapted to managing all the devices;

-a means used to adjust the value of the gain of an RF chain to a minimum value Gmin;

-a means for deflecting the sensors, adapted to minimizing their directivity toward the interference sources;

-a means adapted to adjusting the level of the injected calibration signal relative to the signal of the sensors;

-an RF chain having a gain adjusted to a minimum value Gmin.

Applicants state that the prior art describes various techniques of calibration/equalization which may be gathered under two groups. These two groups can be differentiated especially by the capacity to adapt or not adapt to the presence of sensor observations during the calibration and equalization phase.

For the group that does not adapt to the presence of the observed signals, two further sub-groups of processing are distinguished. The processing operations of the first group implement the calibration and equalization in an uncoupled way while the processing operations of the second group couple the calibration and equalization.

The second approach uses calibration and equalization in a coupled way in seeking to obtain a situation where the outputs of the equalized chains show the greatest possible resemblance to the outputs of a chain known as a reference chain, using a criterion of minimization of the mean standard deviation.

The uncoupled approach implements calibration and equalization in a totally uncoupled way. In this case, the calibration, whose aim is to estimate the differential responses of the reception chains, is through the rejection, into the input of these chains of a calibration signal that may correspond to a sine wave whose frequency varies sequentially on the entire reception band. The measurements made at output of the chains makes it possible to estimate different errors between chains and build equalizing filters at a second stage.

Applicants mention example of way to overcome the limitations in paragraph "C-Equalization of the reception chains". For example, Figure 3 shows a classically used generic calibration system. This system uses a "classically, a switch-based system is used" and fails to describe the characteristics of claim 1 of the present invention.

The system of the injection of the calibration signal is aimed especially at replacing the output of the sensors by an equal-phase and equal-amplitude calibration signal at the input of the

reception chains. The sensor signal is replaced by the calibration signal and this calibration signal is, in practice, substantially identical on the different channels.

Another example concerns Figure 5 in which gives a schematic view of a first device known to those skilled in the art using switches 15i. The replacement of the sensor signals by the calibration signal is done as follows: the switch 15i switches over in such a way that the different channels I are linked to the channel 16 which enables the injection of the calibration signal simultaneously on all the inputs 17i. The simultaneous injection is done for each position of the line. The performance of this switching is related especially to that of the switch in terms of matching and insulation.

For at least these reasons, the anticipation rejection should be withdrawn.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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KMB/jd

METHOD AND DEVICE FOR THE CALIBRATION-EQUALIZATION OF A RECEPTION SYSTEM
Application No. 10/669,691
Inventor: Pascal CHEVALIER et al.
Annotated sheet

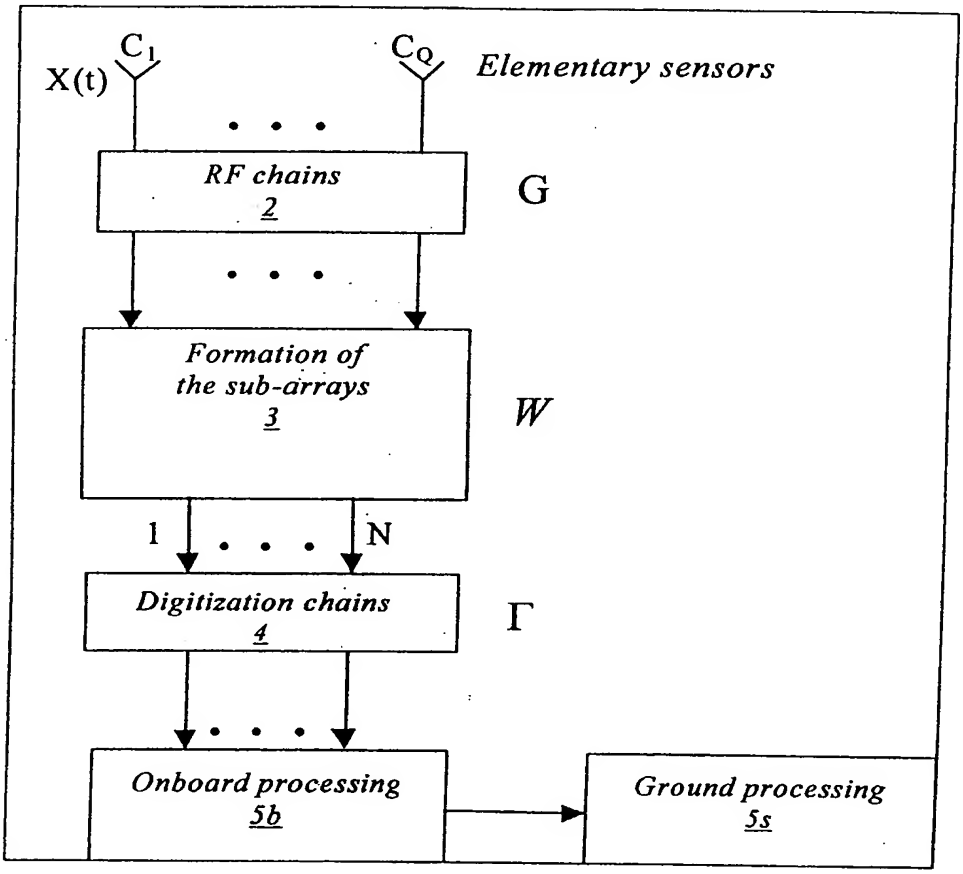

FIG.1 PRIOR ART

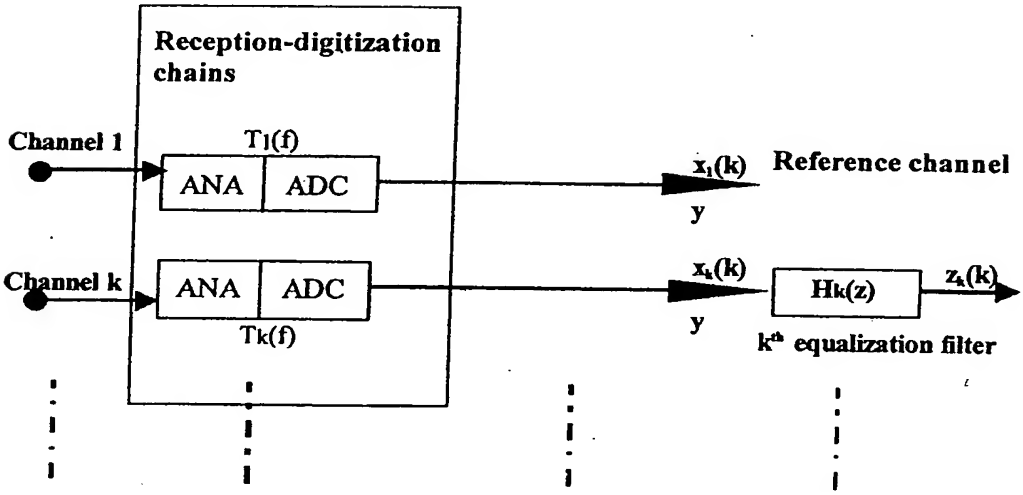

FIG.2 PRIOR ART

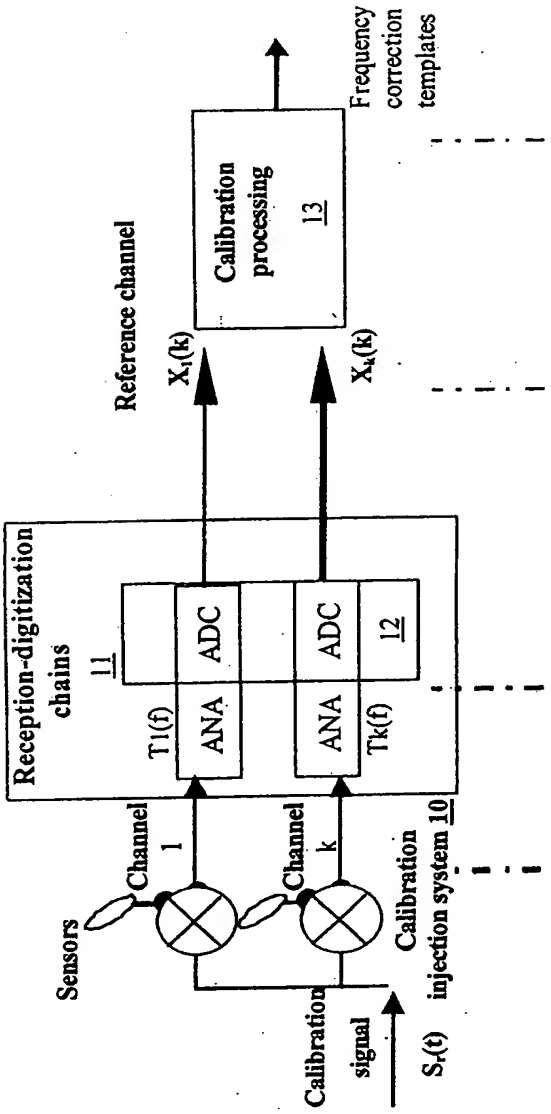

FIG.3 PRIOR ART

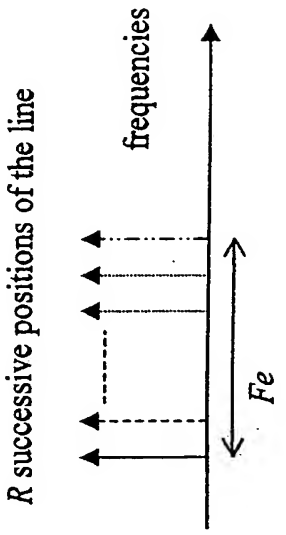

FIG.4 PRIOR ART

Annotated Sheet

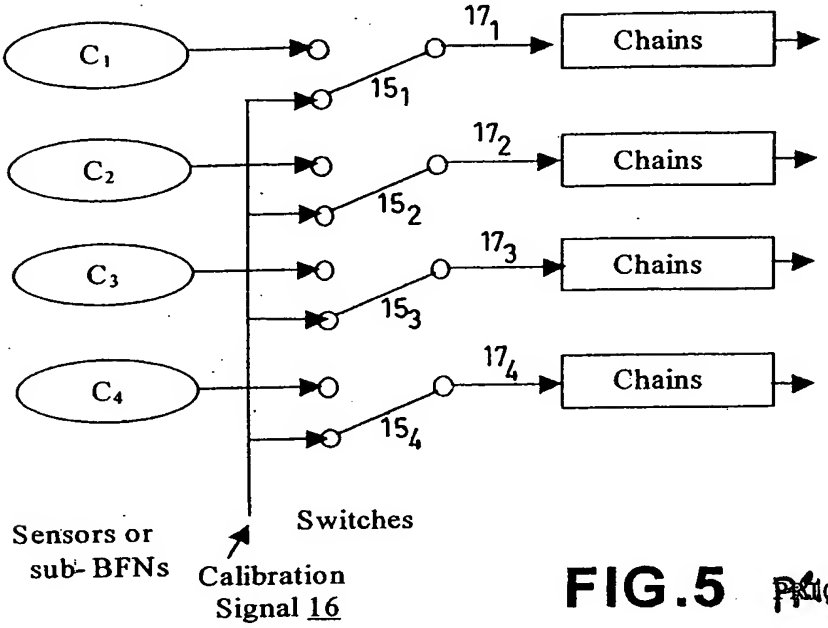

FIG.5 PRIOR ART

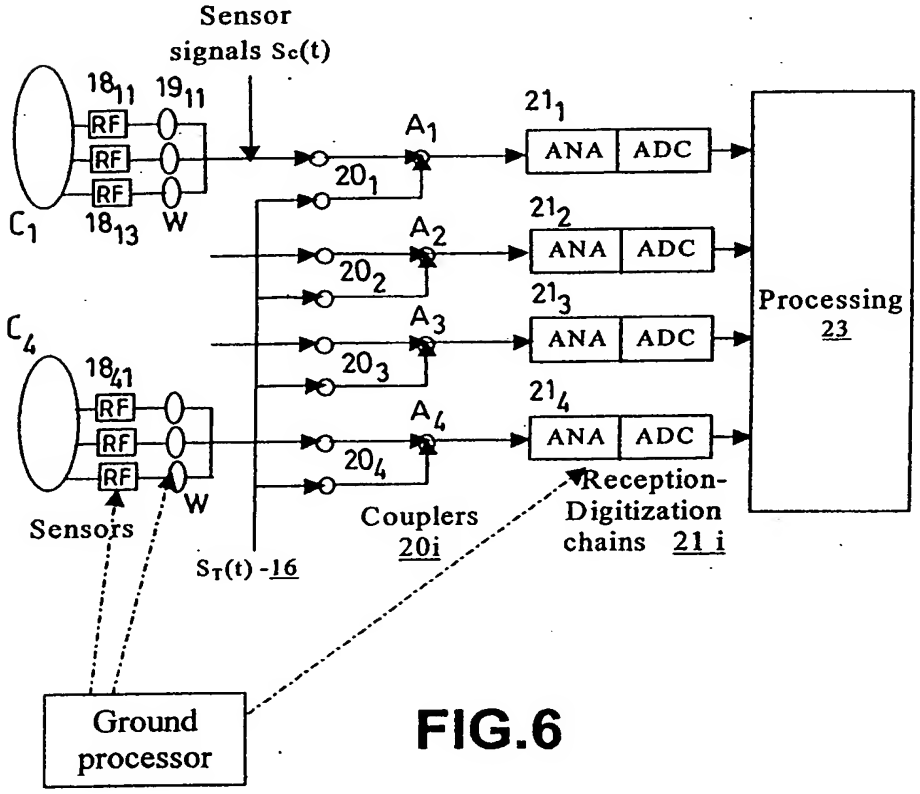

FIG.6